

UNITED STATES PATENT AND TRADEMARK OFFICE



APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/729,833	12/06/2000	Pei-Ren Jeng	4425-090	5660	
75	590 10/31/2002				
LOWE HAUPTMAN GILMAN & BERNER, LLP			EXAMINER		
Suite 310 1700 Diagonal Road Alexandria, VA 22314 LEE, HSIEN		EN MING			
Alexandria, VA	X 22314		,	PAPER NUMBER	
			2823	6	
			DATE MAILED: 10/31/2002		

Please find below and/or attached an Office communication concerning this application or proceeding.

			In.		
	Application No.	Applicant(s)			
Advisory Action	09/729,833	PEI-REN JENG			
`	Examiner	Art Unit			
	Hsien-Ming Lee	2823			
The MAILING DATE of this communication appe		•			
THE REPLY FILED 17 October 2002 FAILS TO PLACE Therefore, further action by the applicant is required to average final rejection under 37 CFR 1.113 may only be either: (1) condition for allowance; (2) a timely filed Notice of Appeal Examination (RCE) in compliance with 37 CFR 1.114.	oid abandonment of this applica a timely filed amendment which	ation. A proper reply n places the applicati	to a ion in		
PERIOD FOR RE	PLY [check either a) or b)]				
a) The period for reply expires 3 months from the mailing date b) The period for reply expires on: (1) the mailing date of this A no event, however, will the statutory period for reply expire is ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS 706.07(f). Extensions of time may be obtained under 37 CFR 1.136(a). The fee have been filed is the date for purposes of determining the period of fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of (2) as set forth in (b) above, if checked. Any reply received by the Offic timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.17(a) is calculated from: (1) the expiration date of (2) as set forth in (b) above, if checked. Any reply received by the Offic timely filed, may reduce any earned patent term adjustment.	Advisory Action, or (2) the date set forth ater than SIX MONTHS from the mailing FILED WITHIN TWO MONTHS OF THE date on which the petition under 37 CFI f extension and the corresponding amothe shortened statutory period for reply the later than three months after the mail	g date of the final rejection IE FINAL REJECTION. S R 1.136(a) and the appropent of the fee. The appropriate originally set in the final C	n. See MPEP priate extension priate extension Office action; or		
1. A Notice of Appeal was filed on Appellant's 37 CFR 1.192(a), or any extension thereof (37 CFF					
2. The proposed amendment(s) will not be entered be	ecause:				
(a) they raise new issues that would require further	er consideration and/or search (s	see NOTE below);			
(b) they raise the issue of new matter (see Note b	,				
(c) they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or					
(d) they present additional claims without cancelling NOTE:	ng a corresponding number of fi	nally rejected claims			
3. Applicant's reply has overcome the following rejecti	on(s): <u>See Continuation Sheet</u> .				
4. Newly proposed or amended claim(s) would canceling the non-allowable claim(s).	be allowable if submitted in a se	eparate, timely filed a	mendment		
5.⊠ The a) affidavit, b) exhibit, or c) request for application in condition for allowance because: See		dered but does NOT	place the		
6. The affidavit or exhibit will NOT be considered becaraised by the Examiner in the final rejection.	ause it is not directed SOLELY t	o issues which were	newly		
7. For purposes of Appeal, the proposed amendment explanation of how the new or amended claims we			nd an		
The status of the claim(s) is (or will be) as follows:					
Claim(s) allowed:					
Claim(s) objected to:					
Claim(s) rejected:					
Claim(s) withdrawn from consideration:					
8. The proposed drawing correction filed on is	a)□ approved or b)□ disapp	roved by the Examin	er.		
9. Note the attached Information Disclosure Statemer	nt(s)(PTO-1449) Paper No(s)				
10. Other:					





Continuation of 3. Applicant's reply has overcome the following rejection(s): 112-second-paragraph rejection to claims 51, 53 and 54 and claim objection to claims 55, 58 and 60.

Continuation of 5. does NOT place the application in condition for allowance because the arguments are NOT persuasive.

Applicant's arguments is on the ground that Chen does not disclose the features of the present invention because the etching rate of the doped region 212 of Chen must be larger than that of the other part of the dielectric layer 204, which is opposite to the claimed invention. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., " the etching rate of the doped region must be lower than that of the other part of the dielectric layer") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In fact, the present invention merely recites " etching said exposed dielectric layer and said dense region simultaneously under the masking of said second patterned phtoresist until a portion of said substrate is exposed", which reads on Chen reference as shown in Fig. 2D and related text as set forth in the Final rejection.

Applicant also argues that the first photoresist layer is used to form the via region and the second phototresist layer is used to form the trench and the via hole but the present invention utilizes the first photoresist layer to form the trench region and the second photoresist layer to form the via hole and the trench. In response to this argument although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Particularly, the present invention merely recites "providing a first patterned photoresist on said dielectric layer to expose a portion of said dielectric layer at which at least a portion of a trench is to be formed", wherein the utilization of the first patterned photoresist is merely to "expose a portion of said dielectric layer" NOT "to form the trench" because of the presence of the phrase "a trench is TO BE formed." (emphasis added) In other words, the present invention does not expressly recite how and where to form the trench. The same true also holds to the case of the "second patterned photoresist."

Applicant further argues that the dense regions 540/640 of Jeng cannot be removed during the etching process to form the opening of the dual damascene because the etching process is finished until exposing the surface of the dense regions 540/640. Contrary to the argument, Jeng in Figs. 5B-5C and related text on col. 5, lines 51-56, expressly indicates that an etching process is performed by means of the second photoresist layer 570 as as etched mask to etch THROUGH the hard mask layer 560, the second dielectric layer 550 and the first dielectric layer 510 UNTIL surface of the substrate 500 is EXPOSED for patterning the dual damascene. Since the etching process etaches all the way through from the uppermost layer 560 to the surface of the lowest layer 500, there is NO reason that the intermediate layer 540/640 cannot be removed during the etching process to form the dual damascene.

Muller and Wu references are used to remedy the deficiencies of Jeng reference. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

For the reasons above, the rejection as set forth in the Final rejection is deemed proper.

Olik Chaudhuri Supervisory Patent Examiner

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